

## CLAIMS

1. A mold apparatus characterized by comprising:
  - (a) a first mold unit;
  - (b) a second mold unit;
  - (c) a sprue bush disposed in one of the first and second mold units and having a sprue for charging a molding material into a cavity space;
  - (d) a machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted, the machining member performing a predetermined machining for a prototype of a molded product when the machining member is advanced; and
  - (e) a bush disposed radially outward of the machining member to surround the machining member and having a flow passage which is formed in a front end portion thereof and through which a temperature control medium flows.
2. A mold apparatus according to claim 1, wherein an annular flow passage through which a temperature control medium flows is formed in a front end portion of the sprue bush.
3. A mold apparatus according to claim 2, wherein the radial dimension of the flow passage of the sprue bush is greater than an inner diameter of a supply passage for supplying the temperature control medium to the flow

passage of the sprue bush.

4. A mold apparatus according to claim 1, wherein the flow passage formed in the front end portion of the bush is an annular flow passage.

5. A mold apparatus according to claim 1, further comprising:

(a) a support member disposed between the machining member and the bush, wherein

(b) the support member extends rearward from a position near the flow passage formed in the front end portion of the bush.

6. A mold apparatus according to claim 5, wherein the supply passage for supplying the temperature control medium to the flow passage of the bush is formed along the support member.

7. A mold apparatus according to claim 5, wherein a discharge passage for discharging a lubricant used for lubricating the support member is formed in the machining member.

8. A molded product molded by use of a mold apparatus comprising a first mold unit; a second mold unit; a sprue bush disposed in one of the first and second mold units and having a sprue; a machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted; and a bush disposed radially outward of the machining member to surround the machining member and

having a flow passage which is formed in a front end portion thereof and through which a temperature control medium flows, the product being characterized by being molded through

(a) charging a molding material into a cavity space via the sprue;

(b) cooling the molding material so as to form a prototype of the molded product; and

(c) advancing the machining member so as to perform a predetermined machining on the prototype of the molded product.

9. A method of molding a product in a mold apparatus comprising a first mold unit; a second mold unit; a sprue bush disposed in one of the first and second mold units and having a sprue; a machining member disposed in the other of the first and second mold units in such a manner that the machining member can be advanced and retracted; and a bush disposed radially outward of the machining member to surround the machining member and having a flow passage which is formed in a front end portion thereof and through which a temperature control medium flows, the method being characterized by comprising the steps of:

(a) charging a molding material into the cavity space via the sprue;

(b) cooling the molding material so as to form a prototype of the molded product; and

(c) advancing the machining member so as to perform a predetermined machining on the prototype of the molded product.

10. A molding machine equipped with the mold apparatus as described in any one of claims 1 to 7.